

CLAIMS

1. A kite safety device for a kite having an airfoil with leading and trailing edges, at least two control lines attached to distal ends of said airfoil and a control flying bar attached to at least two of said control lines, said safety device comprising:

5 a trim line, said trim line having an upper end and a lower end, a central passageway extending from said upper end to said lower end and being sized and shaped to fit slidably through a central opening in said control flying bar of a kite;

10 said trim line having a first stopper adjacent said upper end and a second stopper adjacent said lower end, said stoppers being sized and shaped to prevent said upper and lower ends of said trim line from passing through said central opening;

15 an upper swivel, said upper swivel having a top portion and a bottom portion, each of said top and bottom portions having a hollow central core, a first end and a second end;

said top portion being attached at its first end to said lower end of said trim line, said bottom portion being rotatably attached at its first end to said second end of said top portion and attached at its second end to a trim loop of said kite;

20 a safety flying line, said flying line having first, second and third segments;

said first segment having a first end and a second end and being attached at its
 first end to a first point adjacent a midpoint along a centerline extending
 from said leading edge to said trailing edge;

 said second segment having a first end and a second end, being attached at its
5 first end to said second end of said first segment and having a third
 stopper attached adjacent its second end;

 said third stopper being sized and shaped to prevent said second end of said
 second segment from passing through a ring passage attached to an
 adjustable strap connected to said upper end of said trim line;

10 said third segment having a first end and a second end and being attached at its
 first end to said second end of said second segment, extending through
 said central passageway and being attached at its second end to a first
 end of an upper portion of a lower swivel;

 said upper portion of said lower swivel being rotatably mounted at a second
15 end to a first end of a lower portion of said lower swivel;
 a second end of said lower portion of said lower swivel being attached to a
 fixture, said fixture providing a point for attachment of said flying line
 to a harness; and

 whereby, when said control flying bar is released a user will be free to rotate
20 beneath said kite and when tension is applied to said safety flying line,
 the kite will begin to stall and the kite will descend in a controlled
 manner.

2. The kite safety device, as described in Claim 1, wherein said second segment of said safety flying line is formed of resilient material.
- 5 3. The kite safety device, as described in Claim 2, wherein said second segment of said safety flying line is capable of elongating to include its original length plus a distance between said third stopper and said ring passage, thereby maintaining tension in said safety flying line.
- 10 4. The kite safety device, as described in Claim 1, wherein said third segment of said safety flying line is formed of wear resistant material, thereby preventing breakage of said third segment due to friction with said central passageway.
5. The kite safety device, as described in Claim 1, wherein said first point is adjustably mounted along said center line, thereby altering performance of said kite when said safety flying line is employed.
- 20 6. The kite safety device, as described in Claim 1, wherein said first end of said first segment of said safety flying line is divided into a front portion and a rear portion, said front portion attaching adjacent said first point and said rear portion attaching at a second point on said center line behind said front portion.

7. The kite safety device, as described in Claim 6, wherein a length either of said front portion and said rear portion of said safety flying line is adjustable, thereby permitting stall characteristics of said kite as controlled by said safety flying line to be customized.

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8. The kite safety device, as described in Claim 1, wherein said first end of said first segment of said safety flying line is divided into a first side portion and a second side portion, said first and second side portions attaching adjacent second and third points spaced equidistantly from said centerline of said kite.

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9. The kite safety device, as described in Claim 8, wherein positions of said second and third points are adjustable along lines parallel to said centerline.

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10. The kite safety device, as described in Claim 8, wherein positions of said second and third points are adjustable toward and away from said centerline.

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11. The kite safety device, as described in Claim 1, wherein said first end of said first segment of said safety flying line is divided into a first side portion, a second side portion and a rear portion, said first and second side portions attaching adjacent second and third points spaced equidistantly from said centerline of said kite and said rear portion attaching adjacent said first point.

12. The kite safety device, as described in Claim 11, wherein positions of said first, second and third points are adjustable along lines parallel to said centerline.
13. The kite safety device, as described in Claim 12, wherein positions of said second and
5 third points are adjustable toward and away from said centerline.
14. The kite safety device, as described in Claim 1, wherein said upper swivel further comprises:
 - a top portion fitted within and secured to said lower end of said trim line, said top portion including a protruding first bearing surface;
 - 10 a bottom portion formed as a cylinder having a semi-enclosed upper end, said upper end having a central opening therethrough, and a second mating bearing surface disposed around said central opening, said second mating bearing surface being sized and shaped to fit slidably upon said first bearing surface;
 - 15 said bottom portion having a chamfered side opening including a central projecting member; and
 - a containing cover, said cover having a semi-enclosed upper end, said upper end having a central opening therethrough, said central opening being sized and shaped to fit slidably over said trim line;
- 20 said cover being sized and shaped to fit slidably over said upper swivel.

15. The kite safety device, as described in Claim 14, wherein said first bearing surface and said second mating bearing surface are shaped to accommodate either of ball and roller bearings and said upper swivel comprises a plurality of either of ball and roller bearings.

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16. The kite safety device, as described in Claim 14, wherein said trim loop is formed of resilient material and further comprises:

a first end and a second end, said first end being attached to said bottom portion of said upper swivel;

10 said second end comprising a loop fitting, said loop fitting being sized and shaped to fit over said projecting member and within said chamfered opening; and

whereby, when said loop fitting is placed within said chamfered opening over said projecting member and said containing cover is lowered over said upper swivel, said second end of said trim loop will be secured to said bottom portion of said upper swivel.

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17. The kite safety device, as described in Claim 1, wherein said fixture providing a point for attachment of said flying line to a harness further comprises:

20 a coupling cord, said cord having a first end and a second end and being attached at its first end to said lower portion of said second swivel;

a L-shaped hook, said hook comprising an orifice at a first end and an upward facing point at a second end, and being attached to said second end of said coupling cord at said orifice;

5 a retaining lanyard, said lanyard having a first end and a second end, being attached at said first end to either of said orifice and said coupling cord, having a loop at said second end, said loop being sized and shaped to fit slidably over said upward facing point of said L-shaped hook;

10 a retaining cap, said cap being sized and shaped to fit slidably over said L-shaped hook and having a semi-enclosed upper end, said upper end having a central opening therethrough, said opening being sized and shaped to fit slidably over said coupling cord, said cap being disposed upon said coupling cord above said L-shaped hook; and

15 whereby, when said lanyard is passed through a ring on a harness and said loop is fitted over said upward facing point, thereby forming a closed connection to said ring and said retaining cap is lowered over said L-shaped hook, said safety flying line will be rotatably and removably attached to said harness ring through said lower swivel.

18. The kite safety device, as described in Claim 1, wherein a length of said safety flying
20 line is adjustable, thereby providing a user with ability to control lift of said airfoil.

19. A kite safety device for a kite having an airfoil with leading and trailing edges, at least two control lines attached to distal ends of said airfoil and a control flying bar attached to at least two of said control lines, said safety device comprising:
- a trim line, said trim line having an upper end and a lower end, a central passageway extending from said upper end to said lower end and being sized and shaped to fit slidably through a central opening in said control flying bar;
- a safety flying line having a first end and a second end and being attached at its first end to a first point adjacent a midpoint along a centerline extending from said leading edge to said trailing edge;
- said flying line extending through said central passageway and being attached at said second end to a fixture, said fixture providing a point for attachment of said flying line to a harness; and
- whereby, when said control flying bar is released a user will be free to rotate beneath said kite and when tension is applied to said safety flying line, the kite will begin to stall and the kite will descend in a controlled manner.